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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/730,018	12/09/2003	Mitsuo Watanabe	031303	2775

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EXAMINER	
PAIK, STEVE S	

ART UNIT	PAPER NUMBER
2876	

DATE MAILED: 09/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/730,018	WATANABE ET AL.
	Examiner	Art Unit
	Steven S. Paik	2876

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 July 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Response to Amendment

2. Receipt is acknowledged of the Amendment filed July 15, 2005.

Claim Objections

3. Claims 1-18 are objected to because of the following informalities: the phrase, "a second circuit" in line 7 of claim 1 and in line 14 of claim 16 appears to be -- a second circuit board --. Claims 2-15, 17 and 18 are objected due to their dependent relationship with the base claims 1 and 16 respectively. Appropriate correction is required.

4. Claims 16-18 are objected to because of the following informalities: please delete an extra period at the end of claim 16. Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-3 are rejected under 35 U.S.C. 102(e) as being anticipated by Swartz (US 6,871,786).

Re claim 1, Swartz discloses a method and an apparatus for reading (barcode reader 100 in Fig. 1) and writing barcodes comprising:

a first arrangement to mount (col. 6, ll. 45-67) a converting element (detector 111) that receives a light reflected from a bar code (108) and converts the light received to an electrical signal (col. 2, ll. 43-51); and

a second arrangement to mount (col. 6, ll. 45-67) a processing unit (digitizer 117, decoder 118, and a controller 116) that reproduces the barcode from the electric signal (col. 2, ll. 53-67; col. 5, ll. 63-67),

wherein the first arrangement is a first circuit board and the second arrangement is a second circuit in which the first circuit board is separate and distinct from the second circuit board and the first circuit board is positioned in the barcode reader so as to optimize the reception of light reflected from the barcode (Swartz discloses the elements of the scanner may be assembled into a very compact package that allows the scanner to be fabricated as a single printed circuit board or integral module. Such a module can interchangeably be used as the laser scanning element for a variety of different types of data acquisition and printer systems. For example the module may be alternately used in a hand-held scanner, a table top scanner attached to a flexible arm or mounting extending over the surface of the table or attached to the underside of the table top, or mounted as a subcomponent or subassembly of a more sophisticated data acquisition and printing system. The module would advantageously comprise an optics subassembly mounted on a support, and a photodetector and signal subassembly. Control or data lines associated with such subassemblies may be connected to an electrical connector mounted on the edge or external surface of the module to enable the module to be electrically connected to

a mating connector associated with other elements of data acquisition or processing system. The examiner interprets the subassembly or module as a separate circuit board that may be connected by an appropriate circuit board connector.).

Re claim 2, Swartz discloses the barcode reading apparatus as recited in rejected claim 1 stated above, wherein the processing unit includes a first processor that reproduces a pattern of the bar code from the electric signal (digitizer 117); and

a second processor (decoder 118) that reproduces the bar code based on the pattern.

Re claim 3, Swartz discloses the barcode reading apparatus as recited in rejected claim 1 stated above, wherein the processing unit (digitizer 117, decoder 118, and a controller 116) includes an A/D converter (digitizer 117) that converts the electric signal (from the photo detector 111) into a digital signal (col. 2, ll. 52-55);

a first processor that extracts edge information (start and stop characters and the characters between them) from the digital signal (col. 2 line 63- col. 3, line 6);

a second processor (decoder 118) that reproduces a pattern of the barcode from the edge information; and

a third processor (controller 116 is used to decode symbols and/or interface with external equipment) that reproduces the bar code from the pattern.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 4-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swartz (US 6,871,786) in view of Komizo (US 5,663,552).

Re claims 4-7, the teachings of Swartz have been fully discussed above. Swartz further discloses that it is common for various operational parameters to be defined in software (a computer program) to adapt the scanner for use in specific applications.

Swartz, however, fails to disclose explicitly a barcode reader including a storage unit (memory) that stores computer programs.

Komizo discloses a portable terminal apparatus having image processing function. The apparatus further comprises, among other things, a CPU, a memory (ROM), an image frame memory (107), an A/D converter, and another memory (RAM) for processing an optical image in a predetermined manner. The memories (ROM, RAM, and 107) are obviously used for storing image data related to the optical image, operational parameters and software to properly process the image.

Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have incorporated various types of memory as taught by Komizo into the teachings of Swartz for the purpose of storing image data related to the optical image, operational parameters and software to properly and efficiently process the image.

Re claims 8 and 9, Swartz in view of Komizo discloses the barcode reader as recited in rejected claim 5 stated above, wherein one of the first processor and the second processor functions, and the third processor (digitizer, decoder, and controller) functions as a managing processor as a managing the computer program (operational parameters and software) in the storage unit (memories).

Re claims 10 and 11, Swartz in view of Komizo discloses the barcode reader as recited in rejected claims 4 and 5 stated above respectively, further a communicating unit (123) that receives new computer program or an updated version of the computer program stored in the storage, unit from an external unit, and writes the new computer program or overwrites the updated version on a corresponding computer program .in the storage unit (col. 6, line 23 – col. 7, line 23).

Re claims 12 and 13, Swartz in view of Komizo discloses the barcode reader as recited in rejected claims 10 and 11 stated above respectively, wherein communicating unit transmits the bar code reproduced to the external unit (col. 7, ll. 9-18).

Re claims 14 and 15, Swartz discloses the barcode reading apparatus as recited in rejected claim 1 stated above, a third arrangement to mount a converting element that receives a light reflected from the bar code (the optical symbol is intended to be broadly construed and to cover not only patterns composed of alternating bars and spaces of various widths, but also other one or two dimensional graphic patters, as well as alphanumeric characters) and converts the light received to a third electric signal (the electrical signal generated from an reflected light off of a one dimensional bar code is different from that of a two dimensional barcode), wherein the processing unit (digitizer 117, decoder 118, and a controller 116) mounted on the second arrangement also reproduces the bar code from the third electric signal.

Method claims 16-18 are essentially the same in scope as apparatus claims 1, 4, 9 and 12 and are rejected similarly. Although Swartz does not specify a type of photodetector in the reference, it is well known that a photodiode functions as a photodetector in a barcode reader. The photodiode produces an analog electrical signal read from a portion of the light beam

reflected from a barcode symbol. Then a digitizer circuit generates a digital signal from the analog electrical signal for the purpose of decoding the information encoded in the barcode format. Therefore, the first circuit board includes the photodetector and the second circuit board comprises additional processors and a storage unit.

Response to Arguments

9. Applicant's arguments filed July 15, 2005 have been fully considered but they are not persuasive.

As discussed above, the examiner believes Swartz (US 6,871,786) in view of Komizo (US 5,663,552) discloses, teaches, or fairly suggests the claimed features of the present application. Modules or subassemblies are interpreted as separate and distinctive circuit boards that may be connected using an appropriate electrical connector to provide advantageous benefits and functions based on a user's needs (col.6, lines 45+ of Swartz). The photodiodes are one form of many photoelectrical signal converting elements. The photodiodes are considered as inexpensive compared to other types of photosensors which provides obvious benefits in reducing the cost to manufacture an optical reader.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven S. Paik whose telephone number is 571-272-2404. The examiner can normally be reached on M, T, R, and Friday 5:30a-4:00p (Maxi-Flex*).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee can be reached on 571-272-2398. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Steven S. Paik
Primary Examiner
Art Unit 2876

ssp